

ABSTRACT

An ultra-high-efficiency switching power supply system integrating, into a single package, power conversion switches for multiple power supplies, an input power switching block, an output power switching block, control logic for controlling the power conversion switches and control input/output ports. This integrated multiple power supply package is called a Power Bridge and preferably implements the integrated components as one or more integrated circuit chips housed in the package housing. The Power Bridge is a bridge between the microprocessor of a portable computer and its internal and external power sources. The power supply system facilitates board design because the ultra-high-efficiency power module generally requires less space and generates less heat than conventional power supply circuitry. The power supply module improves power management because of improved communications connections between the power supply module control circuitry and other components, such as busses, other bridge modules and embedded controllers.